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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/015,042	10/26/2001	James R. Wangerow	IGT-1419	6266

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EXAMINER	
RIDLEY, BASIA ANNA	

ART UNIT	PAPER NUMBER
1764	

DATE MAILED: 12/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/015,042	WANGEROW ET AL.
	Examiner	Art Unit
	Basia Ridley	1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 October 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 October 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 1-9 are objected to because of the following informalities:

- in claim 1, recitation "water-gas shift catalyst zone" (line 3) should be replaced with --water - gas shift zone--;

- in claim 9, recitation "water-gas shift catalyst zone" (line 6) should be replaced with --water - gas shift zone--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Edlund et al. (USP 5,997,594).

Regarding claims 1-2, Edlund et al. discloses a reactor for CO control comprising:

- a reactor vessel (50) having a water-gas shift zone and a methanation zone disposed downstream of the water-gas shift catalyst zone (C6/L32-67);

- at least one water-gas shift catalyst disposed in said water-gas shift zone (C6/L32-67);

- at least one methanation catalyst disposed in said methanation zone (C6/L32-67).

Regarding claims 1-2 while Edlund et al. does not explicitly disclose a mixed catalyst zone between the water-gas shift catalyst zone and the methanation catalyst zone, wherein a mixture of said at least one water-gas shift catalyst and said at least one methanation catalyst disposed in said mixed catalyst zone and said mixture comprises a catalytic gradient whereby a

concentration of said at least one methanation catalyst increases in a direction of said methanation catalyst zone, since the reference discloses a bed of water-gas shift catalyst followed by a bed of methanation catalyst (see C6/L32-67 and Fig. 17), presence of said mixed catalyst zone having catalytic gradient is inherent in the disclosed apparatus.

Regarding claims 5-6, Edlund et al. discloses an apparatus for conversion of hydrocarbon fuel to a fuel gas comprising:

- a reformer vessel (52) suitable for reforming said hydrocarbon fuel to a reformed gas mixture comprising CO, CO_2, H_2O and H_2;
- a reactor vessel (56) having a water-gas shift zone and a methanation zone downstream of said water-gas shift catalyst zone in fluid communication with said reformer vessel (C6/L32-67); and
- at least one water-gas shift catalyst disposed in said water-gas shift zone, at least one methanation catalyst disposed in said methanation zone (C6/L32-67).

Regarding claims 5-6 while Edlund et al. does not explicitly disclose a mixed catalyst zone between the water-gas shift catalyst zone and the methanation catalyst zone, wherein a mixture of said at least one water-gas shift catalyst and said at least one methanation catalyst disposed in said mixed catalyst zone and said mixture comprises a catalytic gradient whereby a concentration of said at least one methanation catalyst increases in a direction of said methanation catalyst zone, since the reference discloses a bed of water-gas shift catalyst followed by a bed of methanation catalyst (see C6/L32-67 and Fig. 17), presence of said mixed catalyst zone having catalytic gradient is inherent in the disclosed apparatus.

Regarding claims 3-4 and 7-9, Edlund et al. discloses all of the claim limitations as set forth above. Additionally the reference discloses the reactor wherein:

- wherein said at least one water-gas shift catalyst comprises Cu and Zn (C6/L57-67); and
- wherein said at least one methanation catalyst is selected from the group consisting of nickel, iron, ruthenium, platinum, rhodium, alloys of nickel, iron, ruthenium, platinum, rhodium and combinations thereof (C23/L33-56).

Response to Arguments

4. Applicant's arguments filed on 27 October 2004 have been fully considered but they are not persuasive.

5. The applicant argues that Edlund et al. does not disclose a water-gas shift zone having a water gas shift catalyst for promoting water gas shift reaction because the catalyst identified in C6/L44-56 is a reforming catalyst, which is a low temperature copper/zinc shift catalyst. This is not found persuasive. While the reference disclose that the copper/zinc shift catalyst is used to promote reforming reaction at temperatures between 250°C-300°C (C7/L5-37), the reference also clearly teaches that said catalyst promotes a low temperature shift reaction at temperatures below 350°C (C25/L47-50). Therefore any reaction zone containing said catalyst and operated at disclosed conditions will include both, reforming and shifting reactions, and can be referred to as either a reforming zone, a shift zone or a reforming/shift zone. Rejected claims do not exclude catalysts promoting other reactions in addition to shift reaction, as the claimed transitional term "comprising" permits the inclusion of other steps, elements, or materials, including both, those disclosed but not claimed by applicant and those neither disclosed nor contemplated by applicant. See *In re Baxter*, 656 F.2d 679, 686, 210 USPQ 795, 802 (CCPA

1981). Additionally, the examiner notes that an apparatus claim covers what a device is and not what a device does (MPEP §2114), therefore prior art apparatus teaching all the structural limitations of the claim does not differentiate over the claimed apparatus, even though claimed apparatus is intended to be employed in a different manner.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Basia Ridley, whose telephone number is (571) 272-1453.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola, can be reached on (571) 272-1444.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Technical Center 1700 General Information Telephone No. is (571) 272-1700. Information regarding the status of an application may be obtained from the Patent Application

Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Questions on access to the Private PAIR system should be directed to the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

Basia Ridley
Examiner
Art Unit 1764

BR
December 3, 2004